

Roble, Daniel

From: Roble, Daniel
Sent: Thursday, July 15, 2021 12:58 PM
To: Garvon, Jennifer
Cc: Trivedi, Viren; Gorog, Mark; Orris, Edward; Jativa, Melissa; Fleck, Andrew; Shearer, Dwight; Blinn, Leah; Mike Zucatti; Alex Lopez; Brian Stewart; rwalton@Nobleenviro.com
Subject: RE: [External] Westmoreland Sanitary Landfill Dispersion Modeling Protocol
Attachments: WESTMORELAND_SANITARY_LANDFILL_20210715 (Protocol Comments).pdf

Jennifer,

Thank you for the submittal of the air dispersion modeling protocol for the proposed installation of the leachate evaporator at Westmoreland Sanitary Landfill. In coordination with DEP's Southwest Regional Office and Bureau of Radiation Protection, the DEP's Air Quality Modeling Section provides the attached comments on the protocol.

If you have any questions or wish to discuss these comments, DEP staff will be available for a call.

Daniel

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Sent: Friday, June 25, 2021 12:38 PM
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Subject: [External] Westmoreland Sanitary Landfill Dispersion Modeling Protocol

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Andrew,

Please see attached Air Dispersion Modeling Protocol for the Westmoreland Sanitary Landfill, per our conference call on June 8 and subsequent correspondence.

Please let us know you have any questions or would like to discuss further.

Thank you,

Jennifer

Jennifer L. Garvon, P.E. | *Project Manager*

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E-MAIL ATTACHMENT
DEP Comments on Air Dispersion Modeling Protocol
Westmoreland Sanitary Landfill, LLC
Plan Approval Application 65-00767C
Proposed Installation of Leachate Evaporator
Rostraver Township, Westmoreland County

2.0 Project Summary

1. In a conference call on June 8, 2021, representatives of Westmoreland Sanitary Landfill indicated that the radionuclides would be emitted in the form of a particulate and that assumptions concerning the removal of particulate by the demister would be addressed in the air dispersion modeling protocol. This section of the protocol addresses particulate removal upstream of the leachate evaporator but does not address particulate removal by the demister as discussed.

2.2 Model Selection

2. The U.S. Environmental Protection Agency's (EPA) most recent version of AERMOD, v21112, released on May 11, 2021, should be used.

2.3 Project Source and Stack Parameters

3. This section of the protocol should reference Appendix B.

4. The stack exit temperature listed in Appendix B, 72 degrees Fahrenheit (295.4 Kelvin), is inconsistent with what was provided in Westmoreland Sanitary Landfill's plan approval application, 165 degrees Fahrenheit (347.0 K).

5. The stack exit flow rate listed in this section of the protocol, 30,812 actual cubic feet per minute, is slightly inconsistent with what is listed in Appendix B, 30,653 actual cubic feet per minute.

2.5 Terrain and Receptor Data

6. The DEP suggests using the U.S. Geological Survey's (USGS) 3D Elevation Program (3DEP) data (formerly National Elevation Dataset (NED)) with a one-third arc-second (~10 meter) resolution.

7. The protocol should describe how the air dispersion modeling will address changes in terrain at the landfill over time as discussed in the June 8, 2021, conference call. For example, on the call, representatives of Westmoreland Sanitary Landfill indicated that a berm will be installed at the landfill and that elevations at the landfill would increase over time until a final height is reached. Also, elevations for model receptors at the landfill that are not captured by USGS 3DEP data should be entered in the AERMOD terrain preprocessor (AERMAP) using the TERRHGTS PROVIDED keywords in the input file CO pathway. Then, AERMAP should be used to calculate the hill height scales for these model receptors.

E-MAIL ATTACHMENT

DEP Comments on Air Dispersion Modeling Protocol
Westmoreland Sanitary Landfill, LLC
Plan Approval Application 65-00767C
Proposed Installation of Leachate Evaporator
Rostraver Township, Westmoreland County

8. The protocol should mention that receptor elevations and hill height scales will be calculated by the AERMOD terrain preprocessor (AERMAP) v18081.

2.6 Meteorological Data

9. The DEP does not disagree with the selection of 2016-2020 meteorological dataset for Pittsburgh International Airport (KPIT) for this analysis. However, the protocol should provide a more thorough justification for the use of the KPIT meteorological dataset based on relevant guidance in the EPA's Guideline on Air Quality Models (40 CFR Part 51, Appendix W), AERMOD Implementation Guide (EPA-454/B-21-002, April 2021), and Meteorological Monitoring Guidance for Regulatory Modeling Applications (EPA-454/R-99-005, February 2000).

10. According to the integrated surface data (ISD) file, the base elevation of the KPIT meteorological instrumentation is 367 meters. This value should be entered in the AERMOD input file following the PROFBASE keyword in the ME pathway.

11. The protocol should mention that the KPIT meteorological dataset was processed by the DEP with AERMET v21112, AERMINUTE v15272, and AERSURFACE v20060.

2.7 Emissions Data and Model Results

12. This section of the protocol should provide a summary of the contents/format of the final report that will be developed from the results of air dispersion modeling using the unit emission rate of 1 gram per second. The summary should include the following:

- The calculation formulas, methods, and units to convert the air dispersion modeling results to a concentration and dose at receptor locations.
- All assumptions used to determine leachate particulate and radionuclide content, particulate emission rates, radionuclide emission rates, particulate removal by pretreatment, and particulate removal by controls (e.g., demister). The assumptions should account for potential increases in the radionuclide content of the leachate over time.
- The regulatory and technical thresholds that will be used to compare to the results of the air dispersion modeling.

13. This section of the protocol should mention that the final air dispersion modeling will consist of a written report and all input and output files associated with the EPA's AERMOD Modeling System and that the final air dispersion modeling will be electronically submitted to the DEP.